DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-021508
Date Inspected: 03-Mar-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 630
OSM Departure Time: 1700
Location: Job Site

CWI Name: See below

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 10E/11E-A1-A5, 7E-pp53-E4-2 and the following observations were made:

10E/11E-A1-A5

Upon the arrival of the QA Inspector in the am it was observed the above identified weld joint was 95% tack welded on both sides of the weld joint. The QA Inspector randomly observed the ABF welder identified as #2930 was performing shielded metal arc welding in the weld segment A1. The QA Inspector noted approximately 100mm of weld joint would require SMAW tack welding to complete the seal pass of full length tack weld. The QA Inspector randomly observed the ABF welder identified above performing the SMAW tack weld utilizing 1/8" E7018 low hydrogen electrodes. The QA Inspector noted the tack welding was completed at 0830 and ABF was setting up to perform the Submerged arc welding (SAW) root/fill/cover passes. The QA Inspector spoke with the ABF welding Superintendent Dan Ieraci about the duration of the welding for today's shift (see summary of conversations).

After the SMAW tack welding was completed the QA Inspector randomly observed the SE QC Inspector Tony Sherwood perform magnetic particle testing of the 100% of the full length tack weld. After the MT was completed the QA Inspector randomly observed no relevant indications were located at the time of the testing. The QA Inspector noted ABF had set up all SAW equipment and induction heating blankets were installed and the material was being maintained at approximately 250ºF.

A1-A3

The QA Inspector randomly observed the ABF welding operator James Zhen begin welding the submerged arc welding (SAW) root pass at the beginning of A1 and weld to the center of section A3. The QA Inspector randomly observed the SAW parameters and they were 557 Amps, 33 Volts and a travel speed of 400mm/min. The QA Inspector noted the SAW parameters appeared to be in general compliance with ABF-WPS-D1.5-4042B-1.The QA Inspector randomly observed the ABF welding operators performing the SAW fill passes for the remainder of the shift.

A3-A5

The QA Inspector randomly observed the ABF Welding Superintendent Dan Ieraci welding the submerged arc welding (SAW) fill pass in the center of A3 and weld to the end of section A5. The QA Inspector randomly observed the SAW parameters and they were 560 Amps, 32.5 Volts and a travel speed of 390mm/min. The QA Inspector noted the SAW parameters appeared to be in general compliance with ABF-WPS-D1.5-4042B-1.The QA Inspector randomly observed the ABF welding operators performing the SAW fill/cover passes for the remainder of the shift. The QA Inspector noted the above identified weld joint was completed on this date.

After the SAW root pass was completed the QA Inspector randomly observed the SE QC Inspector Tony Sherwood perform magnetic particle testing of the 100% of the root weld. After the MT was completed the QA Inspector randomly observed no relevant indications were located at the time of the testing.

7E-pp53-E4-2

The QA Inspector randomly observed the ABF welder identified as Jason Collins and ABF helper begin fitting up the lifting lug deck insert identified above. The QA Inspector noted the direction of rolling was stamped with a low stress stamp in the center of the insert plate, so no grinding or welding would mask or deface the identifying marking. The QA Inspector randomly observed the bevel angle to be 45°. The QA Inspector noted the surface of the bevel appeared to be a machined surface with bright shinny metal. The QA Inspector noted the ABF welder was utilizing a prefabricated round copper backing plate held in place with magnets. The QA Inspector noted the fit up was completed on the QA Inspectors shift and appeared to be in general compliance with the contract documents. The QA Inspector randomly observed the ABF welder begin the SMAW root pass. The QA Inspector randomly observed the SMAW parameters were 5/32” E7018 low hydrogen electrodes with 195 Amps for the root pass. The QA Inspector noted the parameters appeared to be in general compliance with ABF-WPS-1070A R1. After the SMAW root pass was completed the QA Inspector randomly observed the welder switch to 3/16” E7018 low hydrogen electrodes with 275Amps and used through the completion of the weld. The QA Inspector randomly observed the ABF welder did complete the above identified lifting lug hole on the QA Inspectors shift. It was noted the ABF welder did not remove the weld reinforcement of the QA Inspectors shift.

Summary of Conversations:

Mr. Ieraci Informed the QA Inspector ABF would start the SAW today and work until completion sometime around 1830-1900. Mr. Ieraci elaborated by stating the OBG lift 11W needs to be lifted into place on 3-5-11. In order to get that completed ABF must complete the 10E/11E-A top deck weld on this date so the cross beams can be installed on Friday 3-4-11.

In addition the QA Inspector asked Mr. Ieraci why ABF had previously set up to perform FCAW full length tack welding, but switched and completed the welding with SMAW. Mr. Ieraci informed the QA Inspector, ABF was

experiencing technical difficulties with the FCAW machines and they did not have time to trouble shoot them. Mr. Ieraci went on to inform the QA Inspector SMAW was ready and they needed to get started welding.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Bettencourt,Rick	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer